ECONOMIC STRUCTURE CHANGES AND THEIR
IMPACTS ON CHINESE ECONOMY

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ABSTRACT

In the past thirty years of initial industrilization of its economy, China has established a primary industry system. But the unbalanced development in economy resulting from the industry policy of laying under stress on the industry aggregates to form a obstacle which hinders the further development. A great change in economy has occured since 1984. The paper presents a historical review about the causes of the unbalanced structure, analyzing the present situation and discussing the possible impacts of the struture changes by means of a system dynamics model. The analyses and the stimulation results of the model show that pertaining to past industry policy would put limits on the further development, new policy must be carried out. But on the other hand, a long period of time would be · required for the completion of the changes. The expectation of rapidly change would prove to be unrealistic.

INTRODUCTION

Background of the Research Work

The paper concerns with the economic structure changes of Chinese economy. By the words economic structure, we refer to the proportion of labor, capital in various economic sectors, such as agriculture, consumption goods production, capital goods production and service industry, and the outputs and the shares among the sectors. The changes of the economic structure are the shift of labor, capital from one sector to others as the adjustment required by economic development.

The research work done in the paper is just an initial step of a broad research of Chinese economic development. While the field presents numorous topics, the paper, can only cover a few of them, focuses on the labor distribution , its changes, the constraints to the changes and the impacts of it on the constitution of outputs and total social output.

Structure Problems

Basically, three items are mentioned about the economic structure problom. First, a large proportion of labor(about 70% of total labor) is devoted to agriculture production to strive for an output constituting about 30% of total annual output of whole society.

Secood, capital production are over emphazised and consumption production has not received enough attention which resulting in the unbalance between capital intensive production and labor intensive production, newly increased labor can hardly be absorbed by the increases of the industry subsystem.

Third, service sector is not large enough to support the needs of people, and the opportunity of employment is limited by discouraging the growth of the sector.

The Work of the Paper

The paper presents a system dynamics model of Chinese economic structure. With the help of the model, paper analyzes the mechanisms involved in the structure changes. Several economic policies are tested to examine their effects on the progress of the changes.

MODEL DESCRIPTION AND MECHANISMS

General Desription

In order to analyze the possible approaches of labor shift among various economic sectors, we formulate a system dynamics model which consists of five sectors, they are agriculture sector, capital production sector, consumtion production sector, service sector ann finance sector. The relationships of the sectors are portraied in Figure 1.

The sectors are not the only ones we have in the real economic system, but as a desire for simplisity, we focus on the mainparts to make the model small enough to be handled. Although the sectors are a part of the real system, they represent a dominant part of it. The outputs of agriculture, capital, consumption and service sectors constituted 88.2 % of the output of China in 1984 and shared 86.9 % of the total social labor.

Capital Produciton Sector

Capital production sector is the ultimate source of supply for capital accumulation in agriculture , consumption production and captial production itself. The demands for capital goods are generated partially from the investment orders in these sectors and partially from the inputs required by the producti~ns. In the later case, the demands are certain percentages of the outputs.

The capital sector is composed of five parts: labor, capital accumulation, production, fund for investment and connection part. The level of capital accumulation is adjusted by the demand for capital goods. The level of labor hired is determined both by the demand for capital goods and desired equipment rate which reflects the technical level of the capital production.

The production of capital sector is determined by capital accumulation and normal capital-output ratio. When the labor supply equals the desired level of labor, the normal capital-output ratio would be realized. But the modification of the capital-output ratio would happen when the discrepency between the desired and actual labor supply exists.

The feature of capital intensity in capital production is describedin the model by the determination of capital accumulation in the formation of output.

One characteristic of the capital production is that a large proportion of it is so called intermediate production, the final capital goods which can be used for investment to enlarge the capacity of production (capital accumulation level in the model) possesses only a small portion of total capital output (about 25%). Moreover, within the small portion, about 53% went back to capital sector itself for investment. The total capital goods invested to agriculture, consumption production and service sectors summed up to only 19% of the final capital goods. This was the actual situation in China in 1984, and we believe it has significant influence on the development of Chinese economy. It will be discussed later.

The fund for investment is obtained from the profit of capital production and is formulated as a level in the model with its increasing rate a percentage of capital production profit. The level of fwnd imposes an upper limit to the feasible annual investment, which sometimes can be lifted by additional government investment as an attempt to speed up the capital production. Actual investment can not exceed the fund of investment.

Dissatisfaction of the demand for capital goods has two results. One is that a desire of further investment is triggered to increase the capital accumulation of capital sector and in turn, expand the scale of capital production. The mechanism is shown in Figure 2.

The investment stirred by the shortage of capital good supply would engble the capial production to grow to the point of satisfying demand. This mechanism is formulated in the model as a negative loop.

Another aspect of the dissatisfaction is that it would force government to exert control on the actual investment in order to release the tension of supply, which was the practices of the central government in the past decades. If no such control is practiced, the competition for the capital goods supply would result in the incompletion of many investment projects, a vast investment waste would be appeared. Another negative loop is formed through government control.

A positive loop exists here. Dissatisfaction yields the needs for more investment in capital sector, but the conducting of more

investment generates more demand for capital goods, which even worsens the situation of capital goods supply.

The shortage of capital goods would also extend the duration of capotal formation. Since too many investment projects share a limited amount of supply, average amount of annual supply to a certain project would decrease, general speaking, the completion of the projeet would be postponed.

Consumption Production Sector

Consumption prodution is the source of consumption goods supply. In 1984, 21,475 thousand labors worked in the sector in China equipped by 1,01.33 billion yuans' capital accumulation and yeilded an output of 350 billion yuan.

The sector is divided into five parts, similar to that in capital production sector: labor , capital accumulabtion, investment fund, production and connection part. The subsector of connection part includes variables such as govenment tax, demand for capital goods, demand for agriculture goods, etc..

Demand for capital goods from consumption production sector originates from the investment order and capital material goods requirement of consumption production. Since more than half of the consumption production depends on the, agriculture production to obtain its raw material, the raw material required from capital sector are not significant relatively speaking. However, the faster growph rate of the part of consumption sector would lead to an increasing of raw material demand in capital production. This general trend is reflected in the model by increasing capital good required in terms of its percentage in the total output of the sector.

Investment is considered the only means of capital accumulation in the sector, although a shift of production capacity from capital production to consumption production exists in China, in the form of changes of some capital production factories to produce consumption goods, this shift is constrained by the management system of China, and does not have an important effect on the development of consumption production capacity.

A remarkable feature of the consumption production of China is its close connection with agriculture production. Because, as we mentioned above, a large part (almost 69%) of its production bases upon agriculture production to offer raw material, the demand for agriculture goods is enormorous and any fluctuation of agriculture production would strongly influence it. This influence is represented in the model by average agriculture goods available, an auxiliary served as a multipler to the output of consumption production.

Demand for consumption goods (DFCG) comes directly from the total income (TIC), which is composed of incomes from total five

sectors. Propensity for consumption (PFC) determines the share of TIC devoted to form DFCG. According to the consumption statistics in 1984, averagely 92% of family income was spend on consumption. PFC is constructed as a table function in the model with an independent variable of it average income.

Dissatisfaction of demand for consumption goods would also stir up a demand for more investment and hiring more workers. The desired level of labor in the sector is determined both by the desired equipment rate in consumption production (DERC) and demand for consumption goods. Labor has more weights on the output in consumption production than in capital production. Therefore, the level of labor responses to the demand more sensitively in the former one.

Dissatisfaction of demand for consumption goods would have a fundamental influnce on the growth of productivity and many other aspects of daily social life. While the influences are many , we can considered ones most directly associated with the problem. We focus on the impact of consumption goods supply on the growth of incomes because it plays a key role in the development of consumption production. The mechanism is: the average wages would increases in a normal speed when consumption goods supply equals or exceeds the demand, but when the shortage occures, a government control appears, which delay the wage growth. This is illustrated in Figure 3.

The output of consumption production is a function of product of labor amount times productivity. Productivity changes as average equipment rate in the sector (ERC) changes which is the results of capital accumulation and technical development.

Agriculture production Sector

China has 68% of its population living in the rural area and 68.4% of its labor force working in agriculture production. This great amount of agriculture population characterizes China as a agriculture country, but the output of agriculture production tells other story, since the agriculture production forms only about 28% of total output from agriculture, capital and consumption production and service. This mismatching between the amount of labor devoted and amount of output obtained reveals a low level of productivity in the agriculture production and makes the low level income of agriculture population inevitable.

In the model, the agriculture sector also contains five parts. In labor part, the level of labor is adjusted by the desired labor which is in turn a function of demand for agriculture goods and average productivity of agriculture labor. Initial level of agriculture production is 316.85 billions and an estimated 30% labor redundency exists. It is estimated that 3% of natural net labor growth can be expected in the next decades, labor redundancy would aggravate if no labor shift happens.

Dominant input to agriculture production is labor. Since capital investment of agricalture production has been much limited in the past decades, the labor productivity remained lower, and an increasing of labor becomes the only way for the growth of output. A vice circle activates here: low productivity of labor and scarecity of capital equipment to increase the output requires more labor to meet the demands for agriculture goods, but more labor work in the sector, more output consumed by the sector itself, and usually, the increased amount of output is just enough to cover the demand from increased agriculture labor, the less output flow out of the sector to urban area and to support the requirement of consumption production, therefore, less capital and consumption goods can be obtained by agriculture sector as an exchange, which hinders the increasing of living standard of rural area and its productvity

Some ways for breaking the vice circle can be identified in the Figure 4. One is government investment. Unfortunately, the experience of past decades does not indicate its effectiveness, because, first, the economic goal of Chinese government in the past years is to establish a sound industry system as quickly as possible. Therefore, almost all investment have been led to the industry (especially, the capital sector), few remains for agriculture investment; second, due to ineffective of management systems, the investment has no significant impact on productivity increase. The average food output per labor remained at the level of not far beyond that achieved 2000 years ago in China.

Second means to break the vice circle is to raise the prices of agriculture products. It would stimulate the farmers to produce more and raise the income level of the agriculture population. In the past several years, this means contributed a lot to the dramatic change of agriculture production in China. But two things which ensue the the price rising depreciate the effectiveness of the means: first, a steady increase of agriculture price would encourage the price rising of capital and consumption goods, which has been observed in China, the benefits the farmer get from rising of agriculture price is offset by the increasing of prices of input goods; second, the benefits is not great amount when shared by about 0.3 billion agriculture labor, it really has improved the income level of them, but few is left for capital accumulation.

Third one is labor shift, that is to shift agriculture labor to non-agriculture production sector. The individual reason for the shifting is to obtain more incomes, which aggregates to form a macro movement of labor to non-agriculture production.

The shift of labor is constrained by two limits: agricultue poductivity and job vacancy the non-agriculture sector can generates. It was estimated that agriculture production had a labor redundancy 30% of its total labor force in 1984. Marginal producticity is negatives. Therefore, labor shift within next several years would not reduce the total output of agriculture production. But when the level of labor reaches its desired level

which is determined by potential productivity and demand for
agriculture goods, further movement would possiblly descend the
agriculture production to meet the demand unless a reasonable
increasing in capital accumulation is realized.

History has observed a general trend of labor shift from
agriculture to urban industry in the process of
industrilization of many developed countries. Rapid growth of
industry usually absorbs the labor shifting from agriculture
sector. In contrast, this normal pattern has not been followed by
China. Emphasizing on capital goods production which is a kind of
capital intensive production makes the capacity of industry
system to absorb labor very low. Attempting of absorbing all
labor shifting from agriculture sector requires a very high rate
of growth in industry system which is practicable under present
system.

Desired mechanism of breaking the vice circle is described in
Figure 5, more labor shift out, less percentage of agriculture
output consumed by the sector itself, more remained for
exchasnging with non-agriculture sector which is a source of
income rising. When the average income rises, demand for
consumption goods grows which provide a enlarged market to
stimulate the growth of consumption production, at the same time,
more demand for agriculture goods and rising of income level
induces the increasing in agriculture capital accumulation which
is the only way to increase output under the condition of labor
shift out. Increasing in agriculture investment would improve the
condition of production so that productivity of agriculture labor
can be increased,which allowes more labor to shift out, and the
growth of non-agriculture production would absorb the labor.

Service Sector

The potential contribution of service sector to the total output
of the society and the role it can play in reducing unemployment
have long been neglected in China. Any activity which dose not
directly related to production of real goods output was
considered unnecessary and its development discouraged by the
government before 1978.

According to the statistics of world bank in 1984 , the output of
service sector constitutesd 35% of total social output in a
typical low income big country, and 40% in a typical middle
income big country. Only 17% of the total output in China came
from service sector and only 19% of total labor worked in the
sector.

The economic reform in China beginning in 1978 introduces more
and more market factors to the economic system which not only
changes the view of people about the economic activity, but also
makes service activity a necessary part of real goods production
and daily social life, which were not true under original system.

The development of service sector has been discussed with

enthusiasm mainly because it opens an new possibility of
absorbing labors which can not be emploied by agriculture and
industry sectors. When people work in service sector, more social
outputs and personal income can be expected, and simultanously,
the pressure on the capital accumulation of capital and
consumption can be released. Moreover, the development of
service sector would improve environment of productions in the
three other sectors.

The service sector designed in the model contains only two parts:
labor and production. Demand for service comes from individual
incomes and production acitivity. We assume that all demand can
be satisfied by the sector. Since service activity involves fewer
capital accumulation comparing with the other three sectors, we
would not consider it in the model, and a great share of profit
from service is transfered to the fund for increasing wages to
hire more employees which reflects the major concern of the
government to reduce unemployment.

Finance Sector

Many functions as the government has in running the economy, we
are only interested in the tax and financing of government in the
model. Currently, government tax possesses 28% of total social
income and 70% of it spent on consumption, 30% on capital invest-
ment.

BASE RUN ANALYSIS

Enviornment of Base Run

The system dynamics model of Chinese Economic Structure(CES) is
composed of 410 quations, which are formulated to represent the
mechanisms described above.

The model is initially designed to integrate with the national
system dynamics model of China and now an independent one in the
series of models cored by the NMC(National Model of China). The
cooperation between CES and NMC still exists. While many
variables of the CES, which directly related to the problem, are
designed endogeneously. The model can not and does not need to
formulate all of its variables endogenously. When the exogenous
variables are needed, NMC provides information for them. The
growth of total population and energy supply shortage in the
futher are obtained directly from the NMC.

The parameters of the model is essentially estimated according to
the statistics of Chinese economy 1984, some from reference books
and others are result of discussing with some economic experts.

The base run begins its simulation time in 1984 and end by 2024,
a period of forty years. Figure 6 to 9 are the simulation results
of the base run.

Assumptions About the Base Run

Labor shifts from agriculture production is the major concern of the paper, serveral assumptions have been made about it in the base run.

First, when the labor shift out the agriculture sector, it would not return to it and stay in labor pool (LBP) as reserve for three other production sectors.

Second, the government would impose some control over the agriculture labor shift, an expected labor reserve of 20% of its total population is hypothesised, the closer the LBP to this level, the more strict the government would be in preventing the agriculture labor from shift to other sectors.

Third, capital accumulation in agriculture sector associates directly with the increasing of productivity, labor shift would be influenced by the change of productivity. Because of the importance of capital increasing in agriculture, capital investment become a key element for the agriculture development. Since the agriculture sector is lack of the ability to finance its investment, a great amount of government investment has be designed.

Fourth, the growth of LBP is determined by the natural growth of urban population and the emmigation of agriculture labor. The net hire rate of three other population sectors can not exceed the level of LBP.

Fifth, when the labor reserve in LBP is below the level indicated by annual hire rate of capital, consumption and service sector, the labor would first be distributed among capital and consumption sector. Service can only obtain labors from the remainders.

Figure 6. exhibits the behavior of labor in the process of labor shift. LK(Curve 1.) represents labor in capital production sector, LC (Curve 2), consumption sector, LS (Curve 4), service sector, LA (Curve 3), agriculture sector. LK, LC, and LS grow from beginning, LA dereases. The growthes of labors in the first three sectors come from natural growth of labor force in non-agriculture sectors and immigration of agriculture labor.

The labor in capital production shows a slow growth, from 30.9 million in 1984 to 80 million in 2024, which reflects the nature of capital intensive in the sector. Though the capital accumulation in the grows rapidly, the labor it absorbs grows slowly.

Different from LK, LC grows more rapidly, lowest at the biginning, 21 million in 1984, it exceeds LK in 1990 and becomes second one among non-agriculture sectors. It is about 100 million in 2024.

LS grows at a high speed. It begins at   24 million and reaches at
about 165 millions in 2024. The reason   for the rapid growth of LS
are two, first, non-agriculture sectors increases   quickly; second,
capital and consumption production sectors can only absorb part
of the   increased labor. Also, a policy of encouraging   the
development of service sector is simulated in the base run.

Agriculture labor (LA) decrease quickly in the base run.   The
simulation   shows that agriculture labor reduces to 0.27 billions
in 2000, and 0.175 billions in 2024.

Figure 7.   illustrates the proportion of each labor has in the
total one.   From beginning to the end,   the agriculture labor
constitutes a major part of the total labor force, but its
percentage goes down steadyly. It gose from 75.8% of the total
labor of the four production sectors down to 33% of that. LK
increases from 7.6% to 16%; LC from 5.3% to 19% ; LS from 8.5% to
32% .

Figure 8.   shows the behavior of output from each production
sector. Curve 1, 2, 3 and 4 represent outputs of capital production,
consumption   production, agriculture   production   and   service
respectively. All   four outputs grow from the   beginning, but
agiculture output keeps at a constant level after   2015. Service
output is the lowest at the beginning, it exceeds   capital
production output in 2000 and consumption porduction in 2010, and
becomes the highest after that.

The   proportion   of   each output   in   the   TSOUT   changes
also. Agiculture output possesses about 28% of TSOUT in 1984 and
reduces to 14.5% in 2024;   capital output from 31% in 1984 to 25%
in 2024; consumption output from 31% to 29% ; service output grows
from 10% to 31.5% in 2024.

Figure 9.   shows that total social output and total social income
(Curve 1 and 2) keep growing, but the growth rate of TSOUT varies.
The growth rate of TSOUT(Curve 3) increases to 11% in 1987 and
begins to decrease after that. It will be 6% in 2000 and 3.8% in
2024.

POLICY TEST AND ANALYSIS

Although the structure change is a naturally requirment of
economic development, it can be enforced or barried by the
economic policy and experiences show that the consenquency of the
policy existing can hardly be fully understood by the people
whthin a short period of time.   One purpose here is just to
analyze the influences that certain economic policies would have
on the economic development regarding the structure changes

A brief summary of original economic policies would help us in
designing the new ones. We consider three economic policies of in
the past frame the economic structure the Chinese economy had One
was over favoring urban industry and neglecting the development

of agriculture and excluding of agriculture population from industrilization. Under the policy, the agriculture got few benefits from industrilization. Price discrimination to the agriculture product transfered agriculture accumulation to urban industry, Which did enchance the industry development, but it took in price of sacrificing agriculture. Backward of agriculturer production in turn haulted further development of industry because it faced a shrinked market and source of some raw material of it was exhausted. China is scare in capital but abundant in labor, which mostly are restricted to the land to strive for living. Privious policy disregarded the fact and chose to put the first priority on the capital production, a capital intensive production, so that the shortage was intensified and the plenty was wasted.

Other inapt previous policy was neglecting development of consumption production. Consumption production received 6% of total investment to agriculture, capital and cansumption production through out the last three decades. Slow development of the sector suppressed the possible demand for consumption goods demand discouraged people to work more and increase of personal income restricted by the fact of consumption goods shortage under which circumstance, the governmment had to practice the policy of low wage to reduce the pressure.

The lack of motivation to work hard dueing to the low wage policy, lack of competition from more cheap agriculture labor produced a low productivity in industry, together with the capital intensive feature, the industry even could not absorb the labor growth of urban area, much less for that of agriculture sector.

Third one was neglecting the development of service sector which was usually a great pool to consuming labor. Backward in service sector reflects that individual's consumption had not been well regarded, and the opportunity of employment was reduced.

The. main objective of new economic policy is to solve the structure problems produced under old pattern of development to emancipate agriculture labor from the constrains of the land to balance the amount of intermidiate production and final production, and to have more labors work in industry and service to produce more output and generate more incomes. Many criteiria can be set to evaluate the effects of policy, we commit ourselves not to make the final judgement of the policys alternatives. But to analyze their effects; in the process, the total social output (TSOUT) and total income, the constitution of labor, capital accumulation, labor growth in each sector are severed as main indces for comparison.

Several policies are designed.

1)Policy to encourage agriculture labor immigration.

2)Policy to encourage the growth of service sector.

3)Policy to encourage labor intensive production in capital and consumption sectors.

4)Policy to change capital producton sector to face more to the demand from outside the sector.

5)Policy to increase agriculture investment.

Policy Test Analysis

Shift of agriculture labor to non-agriculture sectors would be a main feature of Chinese economic structure change in the next · 30 to 40 years. Since China is a developing country,lacking of capital,labor is the main resource of production,therefore,a redistribution of labor would have a significant effect on its economy. In the policy test,we are going to see what would happen if the policy discourages or encourages the labor shift and how many labor can shift out of the agriculture sector under the most favorable policy and economic conditions,and how much influence this shift would have on the total social output,its growth rate and total income.

At first,we test the policy of strict labor shift control which can be understood as a continuation of the original policy.In the test,we also design a great government investment to agriculture prodction in order to increase agriculture productivity. Agiculture labor shift is hard ,but not forbiden,it can happen when the demand for agriculture product from non-agriculture sectors is satisfied and some redundency occurs.

Figure 10 shows that agriculture labor grows from 0.31 billion in 1984 to 0.345 billion in 2000 and climaxes to 0.365 around 2011. After 2016,the agriculture labor begins to decline when the total social labor decreases.Since few agriculture labor has shifted to non-agriculture sectors,the labor grows much slowly than that is in the base run. Service labor goes up to a little bit more above 100 million in 2024,it is 165 millions in the base run;consumption production labor decreases to only 49 million while it is 100 million in the base run;capital production labor even goes down to the original level after reaching 40 million.

Figure 11 exhibits the behaviors of the percentages of outputs of each sectors.A great input to agriculture production (both labor and capital goods) and slow development of other sectors keeps the percentage of agriculture output at a level of 32% for most of the time. Service output still grows but at a lower rate. It grows faster before 2004 than after that, and reaches a level of 25% ,which is 31.5% in the base run.The percentage of consumption output decreases this time,it goes down to 15%.It is because the labor working in the sector is only half of that in the base run and most food products are consumed by the agriculture labor itself.Only capital production has its percentage increased.In the test,it is 29% at the end of simulation,higher than it is in the base run by four percentage point.

Change of total income(TIC) is dramatic,it grows to only half of that in the base run.The growth rate of total social output is also lower in this case and so is the level of total social output.

Contrast to the first test,we examine the result of policy favoring the shift in second one.In the test,other policies we listed above are also imposed which represents the most favorable policy and economic conditions that can be expected.Figure 12 and 13 shows under the policy, agriculture labor would decrease to 2.7 millins by 2000 and 1.5 millions in 2024 when the agriculture labor will constitute 25.5% of the total social labor.Serivce labor grows to 1.9 millions in 2024 and constitutes 37% of total social labor,consumption production labor to 1.1 millions and capital produciton labor to 0.8 million.

After the shift,agriculture output reduce to 21% of total social output in 2000,12% in 2024. Service ouput goes up to 32% in 2024,consumption output maintains at a level of about 31% and capital output gose from 32% down to 23% in 2005 and back to 25% in 2024.

The results of test two are quite different from that of test one but have no significant difference from that of base run.We can conclude from the test that strict control over agriculture labor shift would delay the change of output constitution and growth of total social output and total social income.On the other hand,policies favoring the shift would speed the growth of total social output and total social income ,and birngs a great change to the output constitution and labor distribution,but a long period of time is required for the change,the idea of reducing agriculture labor to half of it is in 1984 by 2000,as suggested by some economists,is unpracticable.

EXPECTATION ABOUT THE STRUCTURE CHANGE

Economic system would adjust its structure along the way of progress.Many elements would be involved in the structure change,among them,the shift of labor severs as an indication of where the economic system will go.

Some economic policies practiced in the last three decades causes unbalance in the structure of the system,further development is barried. A set of well desinged policies must be carried out to pave the way for the change.

The study shows that no one single policy can succeed without the cooperation of others, because of the complexity of social system. We conclude that the main feature of the structure change of Chinese economy in the next three decades is a contiuous shift of agriclture labor to the non-agriculture production sectors. Since labor is a dominant input for production in China, the shift would bring great change to the output constitution and

total social output.

The results of simulation show that, under the most favorable policy and economic conditions, agriclture labor can reduce from 0.31 billions in 1984 to 0.15 billions and constitutes 25.5% of the total social labor in 2024; service labor can grow from 24 million in 1984 to 190 millions in 2024 and constitutes 37% of total social labor; capital production labor will increase from 31 millions to 80 millions; consumption production labor from 21 to 110 millions in 2024.

The major constraints to the changes are the slow growth of agriculture productivity, backward in serivce sector and consumption prouction sector, self-ordering of capital production sector.

Policies of increasing agriculture investment and consumption production investment, free labor shift and encouraging development of service sector are strongly recommended. Completion of the structure change will carry China into a new stage of economic take-off.

ACKNOWLEDGE

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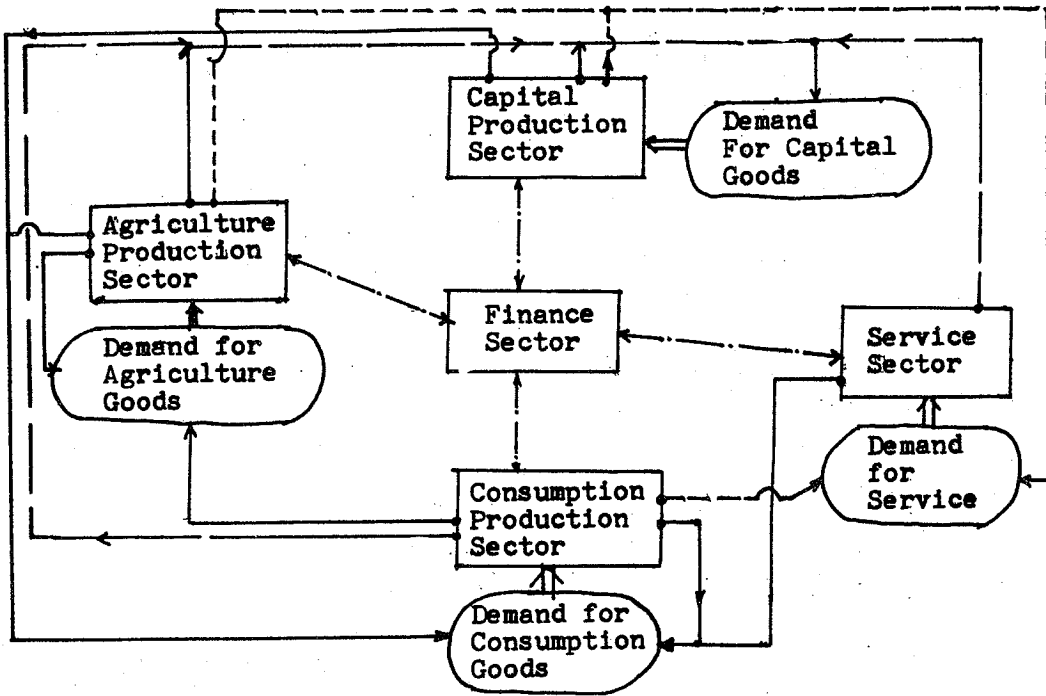World Bank, report, China: Problem and Approaches for Long Term Development, 1984.
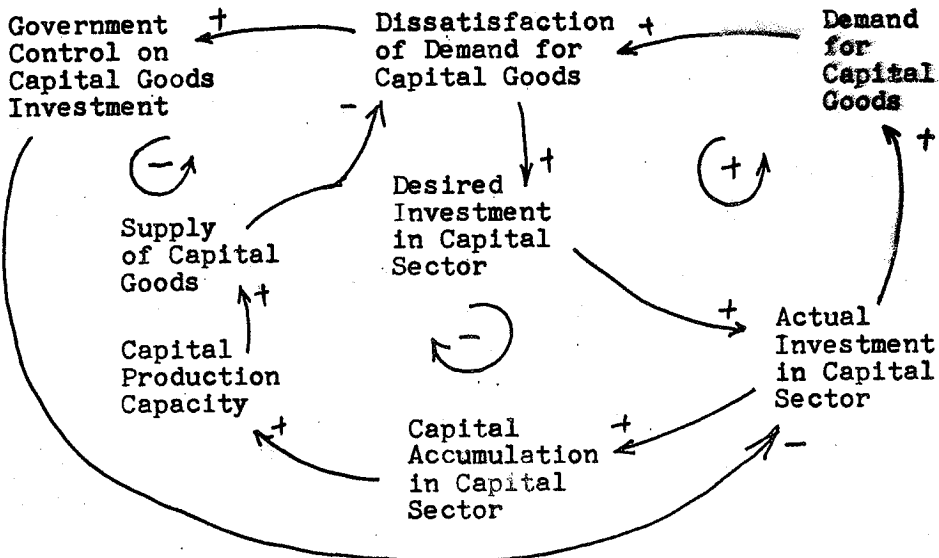
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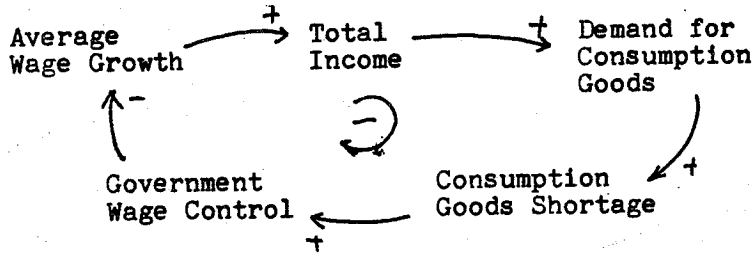

Figure 2. Capital Investment and Control

Average Wage Growth → + → Total Income → + → Demand for Consumption Goods

Government Wage Control ← Consumption Goods Shortage

Figure 3. Wage growth and Control

Desired Labor → + → Agriculture Labor → + → Labor Shift out

Increase in Productivity

Capital and Consumption Goods to the Sector

Government Investment

Amount of Agriculture Output Consumed by the Sector

Agriculture Price Adjustment

Output Remained for Exchange with Non-agriculture Production
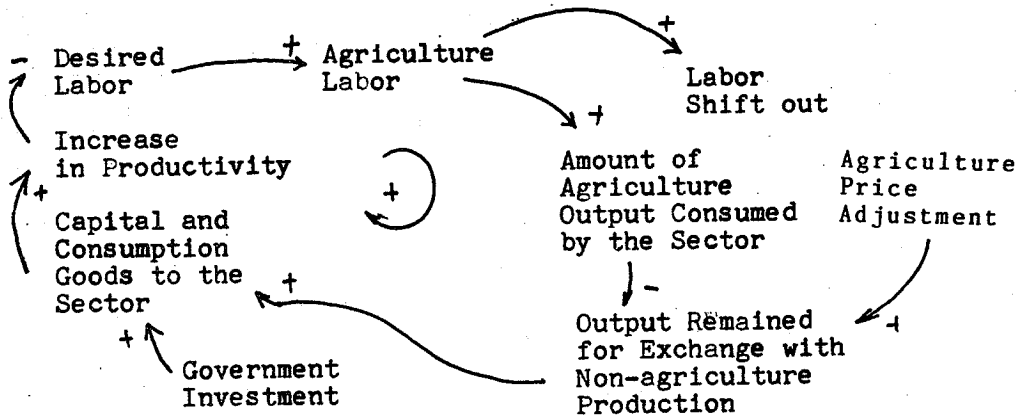
Figure 4. Vice circle in Agriculture Sector

Agriculture Labor Redundancy → + → Agriculture Labor Shift out → + → Job Vacancy in Non-agriculture Sector

Productivity of Agriculture Labor

Agriculture Investment

Average Income of Agriculture Labor

Amount of Agriculture Goods Consumed by the Sector

Demand for Consumption and Capital Goods

Amount of Agriculture Output for Exchange with Non-Agriculture Sector

Non-Agriculture Production

Figure 5. Breaking the Vice Circle
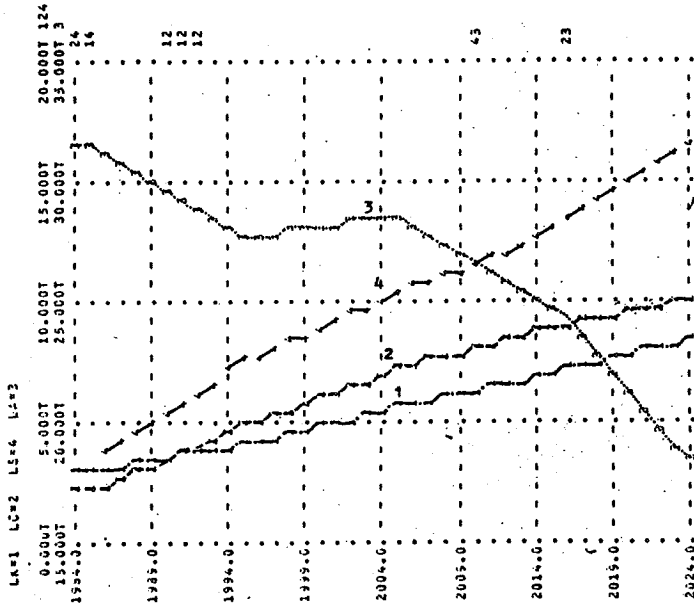
Figure 6. Base Run;Labor
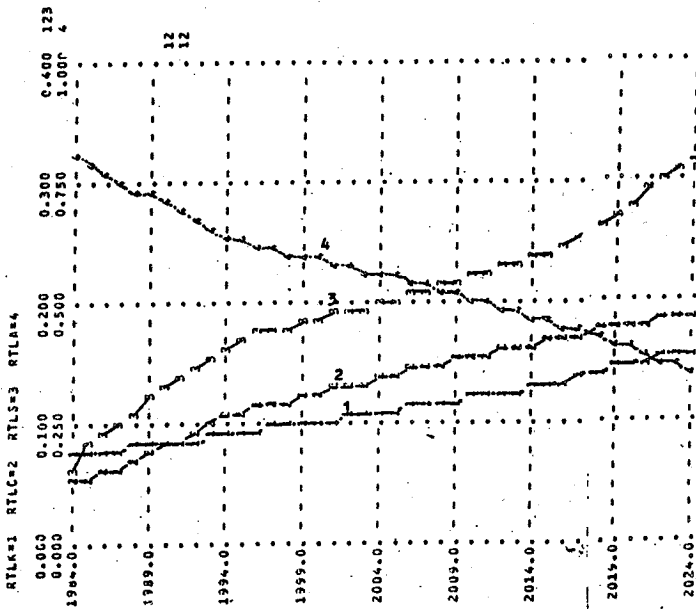
Figure 7. Base Run:Labor Proportion
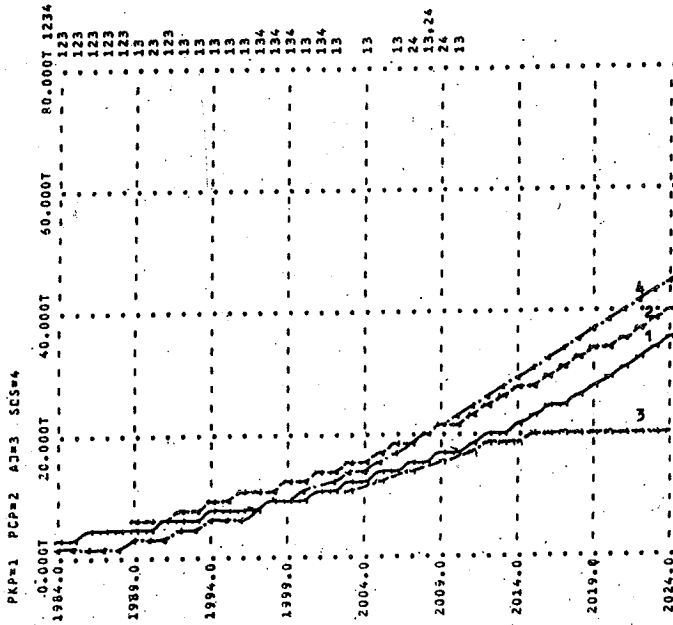
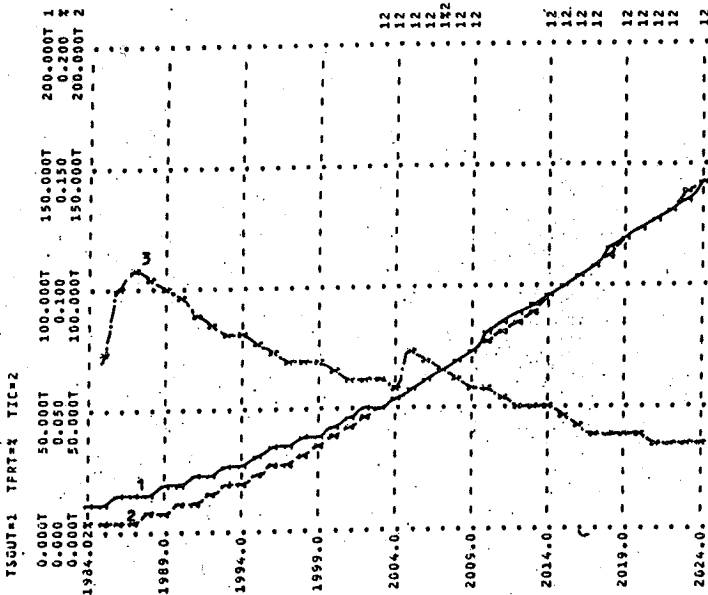Figure 8. Base Run:Outputs of the Four Sectors
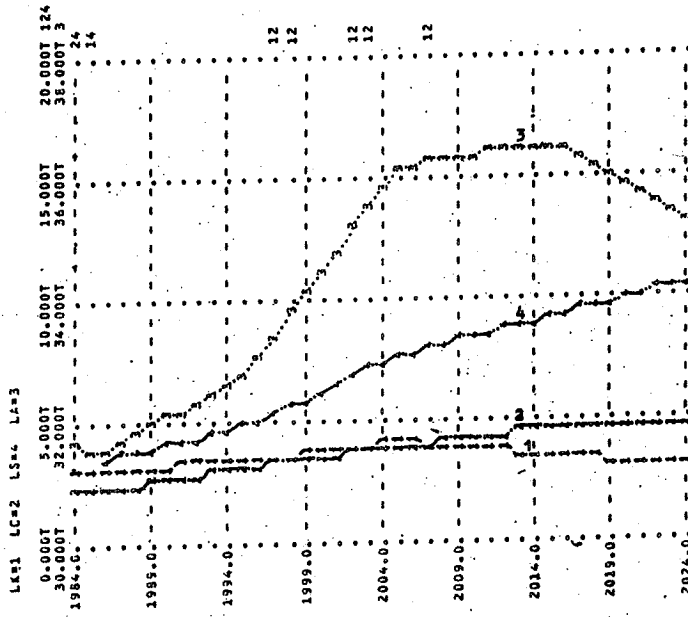
Figure 9. Base Run: TSOUT and TIC
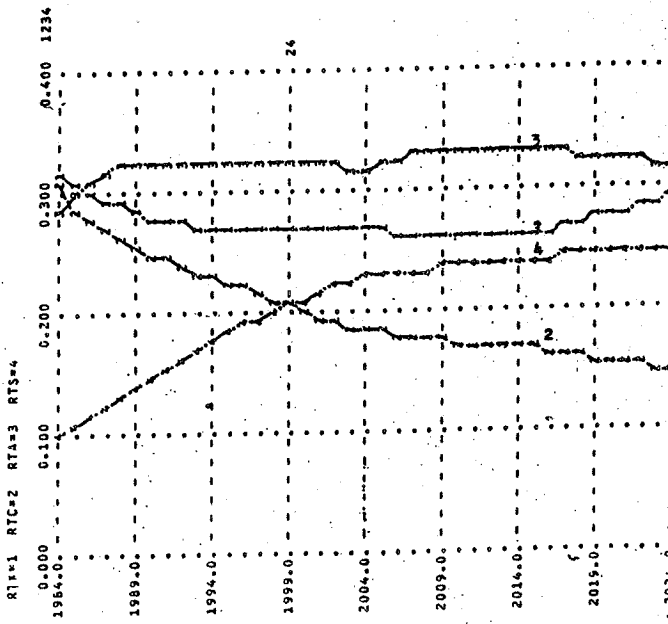
Figure 10. Test 1: Labor
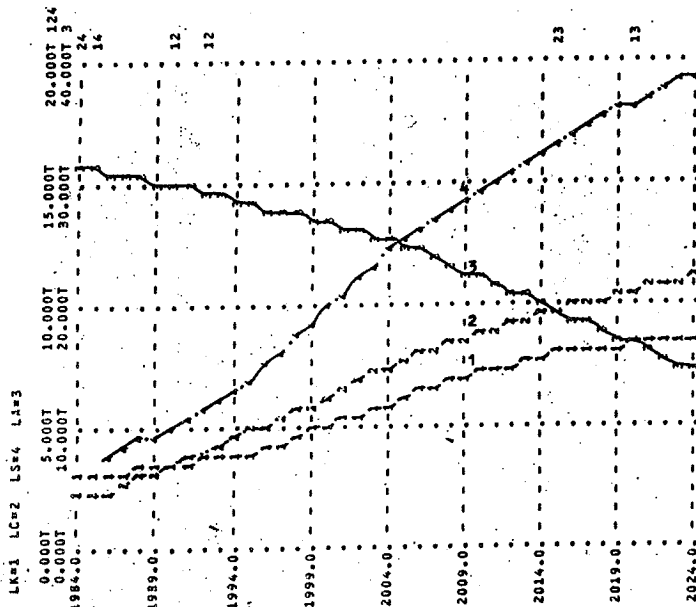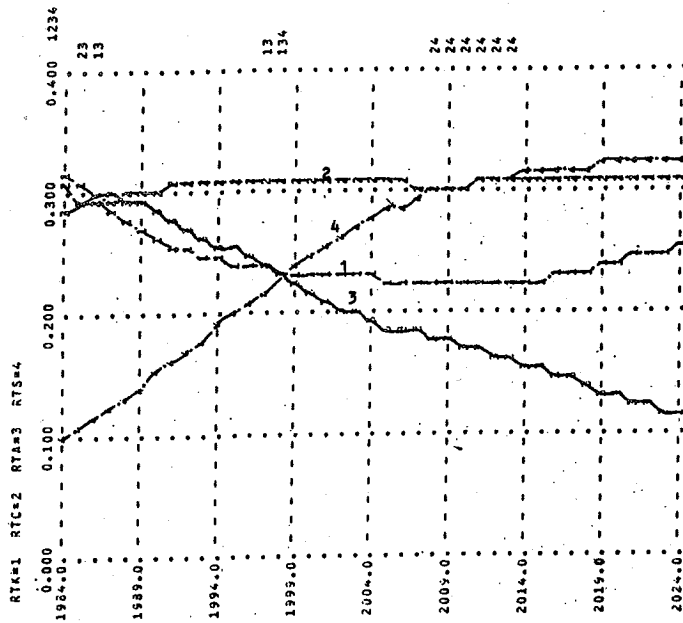

Figure 11. Test1: Output Proportion

Figure 12. Test 2:Labor

Figure 13. Test 2:Output Proportion